

An Approach Based on Statistics and Multi-Resolution Representation to Classify Mammograms

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Abstract : One of the significant and continual public health problems in the world is breast cancer. Early detection is very important to fight the disease, and mammography has been one of the most common and reliable methods to detect the disease in the early stages. However, it is a difficult task, and computer-aided diagnosis (CAD) systems are needed to assist radiologists in providing both accurate and uniform evaluation for mass in mammograms. In this study, a multiresolution statistical method to classify mammograms as normal and abnormal in digitized mammograms is used to construct a CAD system. The mammogram images are represented by wave atom transform, and this representation is made by certain groups of coefficients, independently. The CAD system is designed by calculating some statistical features using each group of coefficients. The classification is performed by using support vector machine (SVM).

Keywords : wave atom transform, statistical features, multi-resolution representation, mammogram

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